

**REMARKS UNDER 37 CFR § 1.116**

**Formal Matters**

Claims 1-16, 19-23 and 26 are pending after entry of the amendments set forth herein.

Claims 1-25 were examined. Claims 1-3, 5-12, 14-19 and 22-25 were rejected. Claims 4, 13, 20 and 21 were allowed.

Applicants respectfully request reconsideration of the application in view of the amendments and remarks made herein.

No new matter has been added.

**The Office Action**

In the Official Action of August 8, 2005, claims 5-12, 14-19, 22 and 23 were rejected under 35 U.S.C. Section 102(b) as being anticipated by Koros et al., U.S. Patent No. 5,167,223. The Examiner interpreted Koros et al. to disclose a rib spreader having a frame 25,30, first blade 700, second blade 13, foot or shoe 11, actuator 45,55 and locking mechanism 400,500, wherein the actuator moves the second blade away from the first blade along an axis. The Examiner further asserted that the locking mechanisms have locked and unlocked positions allowing for pivoting rotation of the second blade and foot about an axis transverse to the first axis, and that the foot 11 is movable through adjusting the pivoting of the locking mechanisms 400,500 to a position vertically from the frame. The Examiner further asserted that the arm holding the hook 11 could be pivoted to a position such that it is directed away from all other elements of the device.

In response to Applicants' argument that the hook 11 of Koros et al. is not a shoe or foot as claimed, but is actually a hook at the end of an aortic valve retractor, the Examiner asserted that the hook of Koros et al. is clearly capable of engaging or touching an external surface of the chest, even though this is not disclosed. The Examiner considered this possibility to anticipate the claimed recitations because Koros et al. "is capable of performing" the contacting claimed. Applicants respectfully disagree. The present claims do not merely recite an intended use, or that the foot/shoe is capable of contacting the external surface of the patient's body, as indicated by the Examiner. Rather, claim 1 recites that the foot is configured to engage an external surface of the body. This is a structural limitation that is not disclosed or inherently possessed by the hook of Koros et al. For example, the foot has a blunt, large surface area to prevent trauma to the external surface of the patient as it contacts it, as

can be seen throughout the figures. The hook of Koros et al. is not so configured, as it is intended to hook internal tissues for retraction thereof.

The Examiner further interpreted the semi-circular basket 13 at the end of the mitral valve retractor 15 to be a blade. This is clearly contrary to Koros's own description, as Koros et al. correctly identifies the blades 700 as extending from the arms of the retractor. 13 is a basket, as identified (although mis-numbered) at column 7, lines 10-12. To further structurally distinguish over the basket of Koros et al., Applicants have amended claim 5 above to recite that the first and second retractor blades each have an elongated vane and an arcuate throat configured to receive a rib. Clearly, the basket 13 of Koros et al. is not so configured.

Further, claim 5 has been amended to recite that the foot is rotatably coupled to at least one of the frame and the first and second blade via a coupling, wherein the coupling permits rotation of said foot with respect to said at least one of the frame and first and second blades in one direction, and prevents rotation of said foot with respect to said at least one of said frame and the first and second blades. It is respectfully submitted that Koros et al. clearly fails to disclose or suggest such a coupling.

Claim 10 has been amended to further recite that the first and second retractor blades are opposing one another. The "blades" (i.e., hook 11 and basket 13) of Koros et al. do not oppose one another. Further, claim 10, as amended, recites an offset drive mechanism configured to drive the shoe vertically, to drive the support surface against the patient's body. The only drive mechanism disclosed by Koros et al. is that to drive arm 40 with respect to the toothed bar 30. The hook 11 is not configured to be driven vertically and the retractor of Koros et al. lacks an offset drive mechanism.

Claim 14 has been amended to recite an elongate member; a first arm coupled to the elongate member; a first blade extending from said first arm; a drive member movably connected to said elongate member and translatable with respect to said elongate member; a second arm rotatably coupled to said drive member; a second blade opposing said first blade and coupled to said second arm; said drive member configured to drive said second blade toward and away from said first blade, the second blade being rotatable, with said second arm, relative to the elongate member; a shoe coupled to at least one of the said elongate member, first arm, second arm, first blade and second blade, the shoe having a support surface configured to engage the surface of the patient's chest when lifting the second rib with the second blade; and a locking member which selectively permits and prevents rotation of said second arm and second blade relative to said elongated member, wherein when selected to permit rotation, said second arm and second blade rotate relative to said elongated member as said driver translates said second arm and said second blade away from said first arm and said first blade, thereby also rotating

said second arm and said second blade and lifting the second rib. The “shoe” (hook) 11 of Koros et al. does not have a support surface configured to engage the surface of the patient’s chest when lifting the second rib with the second blade. The “second blade” (basket) 13 is incapable of lifting the second rib. Koros et al. further fails to disclose a locking member which, when unlocked permits the drive to drive the second arm and second blade away from the first arm and first blade and thereby also rotate the second arm and the second blade to lift the second rib. The valve retractors of Koros et al. are not configured to lift the rib, and would not do so upon actuating the crank handle 60.

Claim 22 has been amended to further recite that the shoe is coupled to one of the first and second blades, and that the shoe and the first or second blade to which the shoe is coupled are driven in rotation in a vertical direction, transverse to the axis defining the direction of horizontal translation of the first and/or second blade with respect to the spreader member, by the driving forces of the drive member as it translates the at least one blade horizontally. The “shoe” (hook) 11 of Koros et al. is not linked to an arm so that it rotates vertically when the crank 60 is actuated. But could only move in a direction parallel to the direction of movement of arm 40.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 5-12, 14-16, 19, 22 and 23 ( claims 17-18 having been canceled without prejudice above) under 35 U.S.C. Section 102(b) as being anticipated by Koros et al., U.S. Patent No. 5,167,223, as being inappropriate.

Claims 10-12 were rejected under 35 U.S.C. Section 102(e) as being anticipated by Giglio et al., U.S. Patent No. 5,520,610. The Examiner asserted that Giglio discloses a retractor having first and second blades 13 attached to a frame 1 and movable arm 2, and that the blades 13 can be moved towards and away from each other along a first axis. The Examiner further asserted that a foot 38 is movable vertically relative to the frame 1, and that a locking mechanism 24,26,27 and 30 locks the foot relative to the frame.

It is not clear what the Examiner has interpreted as the “spreader member” in Giglio et al. Further, claim 10 has been amended above to recite that at least one of the first and second retractor blades is rotatably mounted to the spreader member. Further, it is respectfully submitted that neither of the retractor paddles 13 of Giglio et al. is rotatably mounted with respect to a spreader member, as paddles 13 are not rotatably mounted to frame members 1, 2 and frame members 1,2 are not rotatably mounted to posts 7. Further, Giglio et al. fails to disclose or suggest an offset drive mechanism as claimed in amended claim 10 above.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 10-12 under 35 U.S.C. Section 102(e) as being anticipated by Giglio et al., U.S. Patent No. 5,520,610, as being inappropriate.

Claims 1, 2, 10, 11, 24 and 25 were rejected under 35 U.S.C. Section 102(e) as being anticipated by Tyagi, U.S. Patent No. 5,755,660. The Examiner asserted that Tyagi discloses a surgical retractor having a frame member 5, blades 13,14 attached to arms which, when pivoted such that the blades oppose each other, movement of one of the arms using actuator or drive member 23 allows the blade to move relative to the frame along a first axis. The Examiner further asserted that Tyagi discloses a foot or shoe 15 attached to an arm coupled to the frame and that the foot is movable, relative to the frame and the blades, along an axis transverse to the first axis. The Examiner asserted that a locking mechanism 20 locks the foot 15 and frame 5 relative to each other, and that locking mechanisms allow for pivoting of the blades and foot in a direction which is vertical, albeit in an arc.

Claim 1 has been amended to further recite, *inter alia*, an actuator for moving the foot and one of the first and second blades vertically with respect to the other of the first and second retractor blades, transverse to the direction of the first axis. Tyagi discloses no such actuator. The actuator operated by hand knob 23 only moves the retractor 14 in the direction of the first axis. No other actuator is disclosed.

As to claim 10, Tyagi fails to disclose or suggest an offset drive mechanism configured to drive the shoe vertically, to drive the support surface against the surface of the patient's body. Tyagi fails to disclose any drive mechanism for driving a shoe vertically.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 2, 10 and 11 (claims 24 and 25 having been canceled, without prejudice, above) under 35 U.S.C. Section 102(e) as being anticipated by Tyagi, U.S. Patent No. 5,755,660, as being inappropriate.

Claims 1, 3 and 20-25 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Giglio et al., U.S. Patent No. 5,520,610, in view of Koros et al., U.S. Patent No. 5,167,223. The Examiner indicated that Giglio et al. discloses the invention as claimed except for an actuator moving the arm and second blade toward and away from the other arm of the frame. The Examiner asserted that it would have been obvious to have provided an arrangement by which the arms of Giglio et al. could be moved relative to each other by an actuator, such as the crank lever actuator 60 taught by Koros et al. Even if such a combination would have been obvious, which Applicants do not necessarily agree that it would have been, the resulting combination would still not meet all of the limitations of the claims at

issue, as amended above. Claim 1, as amended above, recites an actuator for moving the foot and one of the first and second blades vertically with respect to the other of the first and second blades. Neither Giglio et al. nor Koros et al. taken alone or in any proper combination, suggests such a feature. Claim 3 recites that the foot and the second blade rotate together about the second axis. The second blade (basket) 13 and foot (hook) 11 of Koros et al. do not rotate together, and, if they are rotated at all, rotate about separate axes. The retractor blades 13 of Giglio et al. do not rotate at all.

Claim 20 was allowed, so there appears to be a typographical error in including claim 20 in this ground of rejection, since neither Giglio et al., nor Koros et al., taken alone or in any proper combination, discloses, teaches or suggests a second blade rotatable about a second axis which is transverse to the first axis and wherein the foot is coupled to the second blade so that the foot and second blade rotate together, relative to the frame member, about the second axis. As noted above, the basket 13 and hook 11 of Koros et al. are not linked or connect in such a way as to cause them to rotate together. Also, as noted above, the blades of Giglio et al. do not rotate.

As to claim 22, neither Giglio et al., nor Koros et al., taken alone or in any proper combination, discloses, teaches or suggests a shoe being coupled to a first or second blade such that the shoe and first or second blade are rotatable about a second axis that is transverse to the first axis, and wherein the shoe and first or second blade to which the shoe is coupled are driven in rotation in a vertical direction by forces generated by the drive member that moves at least one blade along the first axis in a horizontal direction.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1, 3 and 20-23 (claims 24 and 25 having been canceled, without prejudice, above) under 35 U.S.C. Section 103 as being unpatentable over Giglio et al., U.S. Patent No. 5,520,610, in view of Koros et al., U.S. Patent No. 5,167,223, as being inappropriate.

### **Conclusion**

Applicants wish to extend their appreciation to the Examiner for the allowance of claims 4, 13, 20 and 21.

Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-2653, order number GUID-006CON5.

Respectfully submitted,  
LAW OFFICE OF ALAN W. CANNON

Date: \_\_\_\_\_

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By \_\_\_\_\_



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